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An  
Maugural Essay  
On  
Intermittent Fever

By  
Casper Winter  
Pennsylvania

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Perhaps in the whole catalogue of human diseases no one has been more fully described or frequently discussed, than the Intermittent Fever.

In most parts of our Country it is one of the first Complaints attracting the attention of the Student, and continually presenting to the notice of almost every Practitioner. Yet notwithstanding its frequency of occurrence, and our intimacy with its symptoms, and treatment, the exact nature of its Causes has never been fully understood, I say Causes for I think it will be readily admitted that it may be produced by more than one Cause.

From time immemorial Intermittent Fever has been considered as depending nearly altogether for its existence on Miasmata or Marsh Effluvia. I think this idea will not be tenable by any one, who will consider the diversity of Climate Soil and Circumstance and



under which this disease has appeared among us for the last three years, and during seasons of so totally different & diversified a nature. That Marsh effluvia may produce this Complaint I make no doubt, nay I believe whenever this effluvia abounds, it will to a certainty create more or less of it. At the same time it appears impossible to attribute all the Intermittent we have had for the last few years to Marsh Miasmata. In fact I have known its prevalence in such situations, where no one could believe it possible noxious effluvia could be its cause, and where until within the last three years it has been wholly unknown for thirty years past. I allude particularly to that fine tract of Country ranging from the Cherry Hill on the west to the Delaware on the east. Commencing at the Pease-pack and stretching North & East through the County of Bucks. this Range is perhaps as fine and salubrious as any part of our Country, the



Streams are for the most part bold and rapid in their  
 Course, Confined to their Channels, <sup>steep</sup> and precipitous  
 banks, forming but little or no meadow or marshy  
 ground, not sufficient to generate enough effluvia  
 to injure the Country to any extent, Over much of  
 this tract I have travelled "on foot" and was in-  
 duced to consider it as one of the thing and almost  
 inaccessible for reasons of health. ~~As to this~~, few  
 parts of our Country suffered more from the Inter-  
 mittent. I am also acquainted with some parts  
 which have long been noted for the prevalence of this  
 Complaint, which escaped nearly altogether during  
 the general invasion last summer, Salem N. J.  
 is a remarkable instance of this nature, the last  
 season when the disease was ravaging every other part  
 of the State Salem hitherto the very victim of "fever &  
 ague," experienced almost an entire exemption.

This is more extraordinary viewing the situation of <sup>the</sup>  
 this little town surrounded as it is by extensive marshes





Meadows and ponds of stagnant water. Inspecting this location during the last summer it appeared to me if Miasmata could claim indisputable sovereignty over any place upon Earth, surely here was the spot. Yet as above stated Salem remained almost free from the scourge.

Another Circumstance has forcibly presented to my mind opposing the idea of miasma in the Cause of Int. & Remittent fever viz, the remarkable difference of the Summers of 22 and 23. The Summer and first autumn Months of 22 were extraordinary for their great heated dryness so much in places the danger to our domestic animals seemed really imminent from the scarcity of pasturage and the contamination of the waters (the preceding summer also was of this kind tho' not so uniformly hot and dry) in this then the summer of 23 the Peter and Remittent fevers (for they were much alike both of a bilious nature and frequently running into each



Other prevailed to a great degree the Western and mid-  
 Atlantic. The summer of 22 was the exact counterpart  
 of the two preceding - warm season - mild and pleas-  
 ant in temperature, at no one time was the heat or breath  
 of sufficient duration to injure the herbage or affect  
 the crops. Yet behold under every diversity - the same  
 Epidemic raging through the same territories,  
 assuming the same attributes, and stamped by the  
 same characteristics. There was this difference how-  
 ever, it commenced for the most part a month earlier  
 rather more highly bilious and thick when once  
 it laid hold on a patient it was rather more tena-  
 cious - not more obstinate or difficult of cure but  
 was apt to recur when cured.

It may be said by some that the difference of the  
 seasons of 22 and 23 operating in a different way  
 would ultimately produce precisely the same effect  
 on the marshes and low grounds enabling them to  
 engender the same quantity of deleterious effluvia



Be this as it may, it will hold good only as regards  
 local situations, but will not account for the high  
 and dry inland districts, being equally affected by  
 the disease in seasons so very dissimilar. Nor  
 will there be no doubt that the Evaporation  
 from the Earth's surface will be greater in moist  
 seasons, yet the difference will not be so great as we  
 would a priori suppose, for it has been proved by  
 positive Experiment that when the immediate  
 surface is apparently free from moisture, great ex-  
 halations are admitted from the depths of the Earth,  
 the quantum has been Calculated and has been  
 reported by Linnæus in his work on Botany to be  
 5000 gallons from an acre in 24 hours, on an  
 average throughout the year.

I cannot agree with those who consider this exha-  
 lation from the Earth as so injurious to the human  
 Constitution, it is unceasing and natural & even by  
 habit we would be able to resist it. Again were this



a Cause of fever we should in Every situation be Continually destroyed by its effects, Seeing that it is in Continual operation in every place where the Surface is not frozen—

It might be Considered as I object to these as the Causes of this Complaint, that I should state what are the true Causes, this indeed would be as late as could be expected. little as it is however I shall waive it for the present. for as yet I have never been able to satisfy myself on this point. I will only say when the Intermittent fever exists in the epidemic form as it has done for the last three years, it seems probable that it depends on some distemperature of the atmosphere, but the Cause of such distemperature, its nature or exact mode of operation on the system, I Confess myself wholly ignorant. The theory of animalcules is only plausible because we know so little of them whether they really exist or not, that we are disabled from dispro-





improving it, by any positive facts, and indeed this appears pretty much the amount of all we can say on the vague and uncertain theory of distemperatures of the air as a cause of this fever. I must have supposed all Epidemics to depend on Causes of this nature, this is making the atmospheric air subject to very many and diversified distemperatures, and you know the most accurate Chemists have never been able to discover these changes by their ingenious experiments. On this subject I could wish to enlarge but being altogether speculative, it would occupy more time than in propriety could be allowed in a paper of this nature.

As the Cause of Intermittent Fever be what it may I am utterly at a loss to say in what manner the peculiar features of the disease are induced acting in the first instance on that prime mover, and Centre of Vitality, the Stomach - to whose system



mysterious guidance every part of the system appears to observe the most severe discipline, the morbid actions are induced are by the master power of Sympathy conveyed throughout the whole system. But how & in what precise precise manner all this is done, how & when and then a power is sent there recurring at certain and defined intervals of time. I believe has never been intelligibly explained. Can this be done with our present stock of physiological knowledge. It has been asserted that exposure to cold, particularly when combined with moisture is one source of this complaint. I am disposed however to think that this is a very rare cause else we should meet with it often in high latitudes and also in the middle of winter. On the contrary it is a complaint almost peculiar to warm climates and to the warmer seasons of the year!

It is fortunate for us that the treatment of Intermittent fever is far better understood



than the nature and *modus operandi* of its Causes.

In pursuing my Remarks on Intermittent Fever. It might then be thought incumbent on me, to give a regular and succinct account of its Canals as well as the various treatment which it has met with in different periods of its history. this however I do not contemplate.

I shall confine myself to the symptoms progress and terminations of the disease.

By etiological causes numerous divisions and subdivisions may even be made of Intermittent fever, which is abundant in our more for any purposes of practical utility. thus we have the quotidian, tertian, quartan the double tertian the double quartan so the triple tertian triple quartan &c and since have extended the term to a much wider period than the hebdomadals, the menstruales, bimensuales, and even yearly (annuales) in these statements we are now have much reliance



So if such ever did occur it must have been radical and to be accounted for only on the doctrine of Chiasm, &c. Certainly does happen that from their cause or other these primary forms of Intermittent have very much or indeed as it appears the appearance of one or other of the above mentioned forms. But whenever the recurrence of the paroxysm becomes so irregular they have been called *crataea* under which general title should be included all these varieties.

The only legitimate forms then for the Lucidian, Sorian, and the Quartan, &c. was the opinion of the celebrated Sadyes that the tertian was the only primary form, all others being merely varieties of this. Of these three forms the tertian is said to appear most frequently three quotidian lastly the quartan which is rare.

It has been found moreover the quotidian mostly makes its appearance in the morning the tertian at noon and the quartan in the evening.





Under whatever form an Intermittent may make its appearance, the general symptoms are similar, and are such as attend upon the three stages into which it however may be resolved viz, the hot Cold and sweating stage. It would be superfluous minutely to describe these symptoms, for connection's sake I will hastily sketch them. The Cold stage is generally preceded by a sense of weariness and oppression of both mind and body. the pulse is rather weaker than natural, with a dull obtuse pain in the head back and loins. Chilliness now seizes the patient. the surface becomes shrunken pale, and rough, imparting the sensation of Cold when the hand is applied, there increasing, the pulse becomes weaker and quicker with more or less difficulty of Respiration, nausea or vomiting with torpidity of mind, all the animal functions impeded Secretion and excretion stopped, or much decreased. this state of things continues for two three or four hours sometimes a shorter period - than some of these symp



symptoms abating gradually & off, thus the chill  
 less gives way, pulse flows and fuller on the surface  
 relaxed and toward, secretions gradually restored, respi-  
 ration more easy, the hæmorrhæ in mortures increased  
 at this period small large quantities of bile are dischar-  
 ged by mouth & in such &c increased heat much af-  
 fected sometimes, Tumor or distension, these increasing  
 from the hot stage which lasts from four to twelve hours  
 is a plan proportional to the duration & violence of the  
 Cold stage, this tho' a general fact is not invariable for in-  
 stances are on record where the cold stage was wholly  
 wanting or scarcely perceptible, as these symptoms spring  
 off the sweating is now assisted in by a perspiration  
 arising on the surface, which is kept and natural the  
 skin soft and moist, pain ceasing or diminishing,  
 and all the animal functions become natural,  
 this puts an end to the paroxysm, and for the last  
 part the patient falls into a refreshing sleep, in this  
 stage the bowels mostly discharge their contents, with



large quantities of bile, the urine is often discoloured, deposit-  
ing a catenaceous sediment, there then ensue the most  
tricking symptoms denoting a paroxysm, and the pa-  
tient now remains as well as usual until the next  
paroxysm, which is sooner or later according to the type  
of the disease - As now described are the appearances  
in a plain case of Intermittent Fever - But in many in-  
stances we meet with others which would tend very  
much to harass the Practitioner were he unacquainted  
with their nature, these anomalous symptoms were  
very common during the late great prevalence  
of the Epidemic of our last summer, these anoma-  
lous symptoms may be either of a positive or neg-  
ative nature thus an Intermittent might exist without  
a Cold a Rash or a Sweating Stage, the absence of one of  
these stages would form a negative symptom -  
These anomalies are very diversified and to de-  
scribe them would be to add to a regular attack of  
Intermittent symptoms of almost every other known in



disease or diversified one, this -  
When the fever is epidemic nothing is more  
common than for it to be complicated with, or at  
least, to take on the form of the disease which  
may be then prevalent, since we have it associ-  
ated with dysentery, diarrhoea, & hepatitis during  
the late season. A case of Intermittent fever under  
my notice attended by complete loss of vision.

The patient an Elderly Lady of very delicate Consti-  
tution, attacked with <sup>intermittent</sup> fever, in twelve hours from her  
first attack her sight was totally gone. At this time  
there was no appearance of nausea - in preference  
then to disturbing this organ by an Emetic, I waited  
the operation of Calomel & Jij which I had previously  
administered, in less than an hour from its loss  
her vision was restored I attributed this to the Oper-  
ation of the Calomel & Jij purging the bile from the  
stomach to the intestines, thus relieving the stomach.

What was singular in this instance the Patient





never experienced a complete cold stage. the attack from the commencement assuming a low form associated with periods of great prostration, but much stimulation. were resorted to every half hour, this I thought proceeded from the narcotic impression made in the stomach by the bile and thence extended to the whole nervous system - for tho' the stomach did not appear much affected in the first instance a long time elapsed before its wonted capacity for digesting accustomed food was restored -

And it may not be amiss to say a word or two on the Prognosis and diagnosis of the Complaint -

In the commencement if the prostration be severe and of long duration - the prognosis that and in consequence it will be unfavorable for the strength of the patient. great irritability of stomach particularly if it leads to inflammation of that viscus is unfavorable, this sometimes happens and the patient is utterly unable to retain any active medicines. and the irritation and



inflammation<sup>gim</sup> until the patient sinks prostrate such  
course took place in my sick household last summer  
when a busy intelligent Practitioner declared every  
thing he could devise was utterly incapable of alter-  
ing the inevitability of the attack, and the patient  
sunk exhausted. He had in a low feeble state of the  
intermittent of some standing indulged too far his ap-  
petite producing as was supposed irritation inflam-  
mation of stomach, this never ascertained by post-mortem  
examination —

A disposition in this fever to run into a ~~low~~ contin-  
ued form is also unfavourable hence a quotidian  
is more difficult to cure than a tertian a tertian than a  
quartan — Delirium and Convulsions are considered  
by some as unfavourable occurrences. Lind when  
speaking of the Epidemic of Bengal says, when deli-  
rium occurred as an early symptom the patients  
generally died in the fourth paroxysm. Last summer  
when while in the country one of my neighbours



sent for me, I found him labouring under an attack  
 of irregular-intermittent. when I saw him he had  
 a face that took a tense pulse about sixty five, a cold  
 affrighted appearance, and slight delirium. I at  
 once took from his arm eight or ten ounces of blood,  
 this relieved him somewhat. he was on the side  
 of astringents for what he called a dysentery. which  
 on inspection proved a diarrhoea the discharges con-  
 sisting chiefly of bile tinged with blood. regarding  
 this a natural effort of the system to get rid of the  
 offending cause I cut off the astringent intention, al-  
 lowed the bile to purge him thoroughly, and he was  
 got entirely well. here there was delirium from the low  
 stage of the attack and yet a milder case I never  
 saw. The favourable Issues are the reverse of the above.  
 In the diagnosis of this complaint nothing need be  
 said there is but one disease with which it can be at all  
 confounded by Hecle River. indeed there is no similarity  
 existing between the two, being each is preceded by a



This followed by a fever-breathing &c. Intermittent  
fever attacking a previously weak or debilitated  
Constitution seems to be considered unfavourable. tho-  
ugh there are some exceptions - for it has happened  
that Insania and Phthisis have been cured or much  
relieved in this way - is above described then  
after the Complaint has fairly set in it will run a  
longer or shorter Course depending on the practice  
instituted -

If the vitality of the Constitution has not been previous-  
ly impaired, in a great majority of cases this Com-  
plaint will terminate happily, it will however sometimes  
happen in opposition to the most liberal & sanguine treatment  
and the most assiduous endeavours that some of these  
Cases will prove very obstinate and unyielding &c  
continuing for a great length of time in an irregu-  
lar manner, gradually wearing down, and uncon-  
sciously the strength of the patient, and even when  
finally relieved it will be found to have laid









apoplexy. the treatment varies also in the different stages of the paroxysm. Thus in the cold or chill stage little and fortunately very little is here required. The only indication is to bring about the hot stage as soon as possible, warm drinks, warm applications, and friction, emetics on some cases had recourse to, these means are not to be pushed so as to increase the expected hot fit. emetics are doubtful in this case particularly if the depression be great. When the hot stage has been induced our indications are no less plain than in the former, viz to allay fever and irritation and guard against local determination. To fulfil these indications, purgation & venesection is in many instances to be resorted to and this seems most naturally to flow from a new & interesting observation this appears to me very different from formerly, particularly as the decade affords not such success. I am informed some highly respectable Practitioners as being rarely or never employed it when however the head is much affected or when



local determinations threaten the canal must not be neglected. On the contrary it here stands prominent among our remedial resources to relieve irritation; and when external and drastic means prevail the bleeding thus has been the established mode of diminishing the treatment of intermittent for a long time - active purges not only relieve the stomach and bowels of their irritating contents, but also detract from the circulating mass of fluids (various cooling diaphorics are now also resorted to - I do not know whether and for the idea given occasion in irritation - antispasmodics often appeared to me worn medicines the words spoken at hospitals and being patients at the same time under the effects of purgative medicines. also issuing various cathartic articles and observing observing the difficulty of producing purgation as well as perspiration and in such circumstances that this plan must certainly be erroneous. for it is more generally admitted that most of our remedies act by a stimulating



Obstruction directly or indirectly. It is moreover said that the  
 obstruction of the intestinal system depends upon an increased  
 tension of the system and on the same time irritation in  
 the peritoneum, if this be true this practice rests not on sound  
 physiological views. It is stated some where, and  
 apparently with some force, that the exhibition of purga-  
 tives during the first stage of scarlatina is of doubtful effica-  
 cy tending to increase the heat and irritation, a prin-  
 ciple this appears rational I however have never witnessed  
 such ill effects, admitting it to be the case we are  
 in a greater dilemma than ever, what we do do  
 to certainly would be productive of more in, we should  
 irritation to allow the various contents of the stomach  
 and bowels to remain until a solution of the fever,  
 than to risk the consequent irritation of a purge -  
 Again in continued fever and other diseases we do  
 not experience them in effects, and if we did we  
 would not omit them. the first purgative being  
 placed we endeavour to bring about a perspiration

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by internal and external means this will be seen when  
 we have a review of the paragraph on this  
 subject in the treatment for preventing a return of  
 it, and whilst English is the general indication, we  
 are being severely palliative.

The indication is to be answered first, by a strict  
 attention to diet, air and exercise, &c. by our tonic  
 remedies, and in many cases we shall be obliged to un-  
 der the most scrupulous attention we point to the exact  
 observance and proper regulation of the regimen  
 as our best endeavours with other means will in this  
 kind of tea cases prove nugatory and unavailing.  
 and as the complaint, be the cause be what it may  
 appears to originate in the stomach, that kind is mostly  
 found in a debilitated and weakened condition.  
 hence the diet should be very much as in dyspepsia  
 & colic it may be stronger and allowing a greater  
 latitude of choice. this like other rules admits of  
 exceptions for often times will be perceived in sei



Obvious inflammatory diathesis inwards, in such case  
the diet should be simple and weak, until blood  
is kinder than usual purging, as we overcome such temper  
in, this dietation is the instrument in general Inter  
mittents - Haslingham obviated all objections we  
can as to the use of Quina -

Of all the points of argument in this debate we have had  
never seen to more difference of opinion than the question  
chronical period of the complaint & in what measure state  
of system are we to concur with Quina?

As far as my judgement will go - this period is by no  
means a fixed one, it is varied by several circumstances  
viz 1<sup>st</sup> Season of the year - 2<sup>nd</sup> Nature of the diathesis -

3<sup>rd</sup> Climate - 4<sup>th</sup> age of patient - 5<sup>th</sup> constitution -

6<sup>th</sup> State - I have not seen remarked that an inflammatory  
diathesis is generally attendant on chronic Inter mittents

And then we are prevented from resorting to tonics until  
such inflammation is more or less allayed and before we can  
accomplish this in many cases, the second method, viz



paroxysms may have subsided - here then we can not  
 use tonics until the third appearance - Of the Cases which  
 have fallen under my immediate Cognizance I have  
 but one in which I resorted to the Peruvian Bark until  
 after the second appearance - In the latter part of summer  
 we see and little of this disposition - On the other hand an  
 opposite tendency is more to be dreaded in some of  
 these Cases we administer tonics from the very Com-  
 =mencement - Indeed it was the Opinion of the British  
 =ed physician that Bark was not indicated in any  
 period or in any stage of the Complaint -

Nature of the Epidemic - This differs in different reas-  
 =ons - thus at one season it will be ~~more~~ in-  
 =ed as another kind of or even typhoid - In the one Case we  
 =on - given two or three paroxysms in the other in one  
 =ed on to tonic Remedies -

Climate - In hot climates it is in the most violent  
 =ed and rapid in its progress - so much so  
 =ed writers on tropical climates assert that in some



instances then have recourse to emetics immediately one  
 author whose name I disremember says he adminis-  
 tered the Bark before the remission was complete and  
 says he was obliged to do so on account of the great  
 tendency of that climate (more or less of the East Indies) to  
 run into a low form - in other places are recorded  
 where the bark was given before any attention had been  
 paid to cleansing the alimentary canal -

Age - The proper period for commencing with tonics is  
 different in children from what it is in adults in  
 children it is more apt to be inflammatory and we  
 defer their use for some days in old people the converse  
 is frequently equalled true -

Constitution - The diversity in the constitution of individual  
 patients will also vary this period - thus in stout Rob-  
 ust patients it will be best to prepare the system  
 as we put in bark or the tonics, while debilitated  
 and cachectic habits will not bear with impunity this  
 delay - The stomach also is at times in so irritable a





a condition that much time & capital before we can  
 permit to obtain our remedies. It may I think be stated  
 as a general rule in this climate that tonics should  
 not be used until by our antiphlogistic measures we  
 shall have subdued all inflammatory disposition  
 and the stomach thoroughly cleared of all noxious  
 contents -

Quinids. There are but four varieties of the Root-Medica which  
 have not at some time or another been introduced as a tonic  
 into the treatment of Intermittent fever, and not a few  
 of them during their ascendancy were looked upon as  
 specific - at the present day Quinids however habitually  
 rely on the Peruvian Barks for the cure of this disease  
 and resort under certain peculiarities of Circumstance  
 to wine be found sufficient for this purpose when aided  
 by attention to the general system - On this account then  
 and to the objection I fear to dwelling the bulk of this essay  
 - rather than I can avoid I shall confine myself brief-  
 -ly to this substance as a tonic - Cases do however then



occur however, where it will be necessary to change this  
remedy - and resort to some other until the susceptibility  
of the system is again awakened to the bark. Several  
of the preparations of the Bark are now made to exceed-  
ingly sweet and so concentrated as scarcely to offend the  
most delicate stomach and on this account may all to  
be preferred to the oak in substance which when the  
stomach will bear it is the most efficacious mode of  
administration.

Bark may be given in substance infusion decoction  
tincture &c in various extracts but particularly of Quinine &c  
and in long Continued Cases it will be advantageous  
to change from one to the other to prevent the infir-  
mity of habit or even to lay it aside for a time sub-  
stituting some other tonic as serpentaria virginiana  
given in the same shape as we do the Bark - a  
Combination of these two articles particularly with  
the Carbonate of Potash has been highly recommended  
The Eupatorium Perfoliatum has long been advan-



advantageously used in some parts of our country and is  
 also become ende in regular practice as a substitute for  
 Peruvian Bark. It is certainly a valuable article, but  
 from what I have seen, should be prescribed with cau-  
 tion. Nothing is more common in domestic practice in  
 the country than to make a decoction of it and desire  
 the patient to drink as much of it as he can, if the  
 decoction be very strong this will at times produce  
 violent vomiting, purging, and sweating &c  
 many other articles both native and foreign have  
 been introduced as auxiliary to, and substitutes for  
 Peruvian Bark. few of them now are ever found requi-  
 -site, some arstringent remedies had at one time ac-  
 quired credit in the cure of this disease, as the  
 sulphate of copper, acetate of lead, kino, catechu alu-  
 minic &c has held a very high reputation,  
 but from the known effects of this remedy on the  
 system I suspect it has been very improperly  
 placed among the tonics —

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In certain obstinate and protracted cases of this complaint especially when depending on various irregularities producing Relapse after relapses it will sometimes happen that this course of treatment will altogether fail in such cases have been successfully treated by mercury breaking up and destroying the morbid peculiarity of system upon which the disease now depends: even if a salivation does not effect so much it will probably place the system in such a condition that a recurrence to tonics will now finish the cure.

When such means prove abortive it has been recommended to send the patient on a long journey and by thus changing his air, food, exercise, hours, and company to bring about a revolution of his whole system this will meet our most ardent expectation, in some cases, but unfortunately in others after a protracted bilious Intermittent the poor patient will be too much debilitated to comply with such advice.

